AIR COMMAND AND STAFF COLLEGE

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SETTING SUN: A CRITICAL ANALYSIS OF JAPAN'S EMPLOYMENT OF NAVAL AIRPOWER IN THE BATTLE OF THE CORAL SEA

by

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Abstract

The Battle of the Coral Sea, the first Naval engagement fought exclusively between Naval Air forces, was a pivotal battle of the war in the Pacific. Although considered a Japanese tactical victory, it was the beginning of the end of Japan's war effort. This analysis examines this decisive battle from the Japanese perspective. The critical analysis will include a summary of the reasons why the battle unfolded as it did, and will draw conclusions as to how the Japanese may have been more successful both strategically and tactically in this key battle of World War II.

Chapter 1

Introduction

Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war.

—Carl Von Clausewitz, On War

Although Clausewitz wrote these words more than 160 years ago, their application is timeless. This "friction of war" was certainly in evidence in the Battle of the Coral Sea. This epic naval battle, fought between Japanese and Allied forces in early May of 1942 was the first naval engagement fought exclusively between naval air forces. This Clausewitzian critical analysis examines this decisive battle from the Japanese perspective. Though their forces were superior in terms of numbers and battle experience to those of the Allies, the Japanese failed to achieve their objectives. It is clear that the Japanese could have avoided making many mistakes which ultimately denied them victory. The analysis includes a summary of the reasons why the battle unfolded as it did, and draws conclusions as to how the Japanese may have been more successful both strategically and tactically in this key battle of World War II.

Clausewitzian Critical Analysis

In Chapter 5 of his seminal work, *On War*, Clausewitz breaks down the critical analysis process into three components: (1) The discovery and interpretation of relevant

facts; (2) The tracing of facts back to their causes (critical analysis proper); and, (3) the investigation and evaluation of means employed (criticism proper). In simple terms, a Clausewitzian critical analysis delineates, "what happened, why it happened, and how it could have been better." To that end, Chapter 2 describes what happened in the Battle of the Coral Sea. Next, Chapter 3 identifies the causes of what happened and examines ways the Japanese could have been more successful. Finally, Chapter 4 provides some concluding thoughts.

Background

In pursuit of a long-anticipated and meticulously planned ascendancy, Japan undertook hostilities against the Western Powers who had either colonized or claimed most of the territories desired by the Japanese. Beginning with the surprise attack on Pearl Harbor on 7 December 1941, the Japanese continued the offensive with a series of near-simultaneous landings throughout the Central Pacific and East Asia. The Japanese armies overran large areas as one after the other quickly succumbed. None of the Western powers had seriously considered such a predicament, and thus were unprepared for the Japanese onslaught. The United States, Great Britain, and the Netherlands had relatively weak forces in Asia, and were no match for the superior Japanese forces.¹

This gigantic offensive made Japanese forces masters of an "empire" which stretched from the Indio-Burmese border in the west to the Gilbert and Ellice Islands in the north to the Indian Archipelago in the south, an area nearly 5,600 miles in diameter. Given popular acclaim for the sensational victories in the first months of the campaign, it was no surprise that the Japanese leadership desired to "keep the ball rolling." The Japanese Navy put forward several plans for extending the military offensive, all of which had the

strategic objective of destroying the U.S. Navy and capturing the bases from which an enemy counter-offensive could be launched.

Based on the premise that the Navy must remain on the offensive while guarding against a counteroffensive, there were many in the Naval General Staff who advocated the invasion of Australia. The Army however, disagreed, quickly pointing out that such a mammoth undertaking would require ten to twelve infantry divisions. The Army, because of its commitments on the Asian mainland, could not support such an undertaking. In response to this vehement opposition, the Naval General Staff developed an overall plan for isolating and neutralizing Australia through the acquisition of key island bases along the lines of communication between the U.S. and Australia.²

Doolittle's daring carrier-based bombing raid on Tokyo on 18 April 1942 forced the Japanese to hasten the development of their plans. Although it did minimal damage to Japan's industrial capability, the effect on the Japanese psyche was more severe. As one Japanese citizen wrote to her fighter-pilot cousin, "The bombing of Tokyo and several other cities has brought about a tremendous change in the attitude of our people toward the war. Now things are different; the bombs have dropped here on our homes. It does not seem any more that there is such a great difference between the battlefront and the home front."

For Admiral Isoruku Yamomoto, Commander of the Japanese Combined Fleet, the timing of the Doolittle raid was fortuitous because it provided him broad support for his three-step strategy to destroy the U.S. carriers: Step One, designated *Operation MO* (for *Moresby*), was to occupy Tulagi in the southern Solomon Islands to provide for a naval air base to control the northern part of the Coral Sea. This would be followed with a

landing at Port Moresby in the southeast part of New Guinea to bring Northern Australia within range of Japanese aircraft. Step Two, designated *Operation MI* (for *Midway*), was to conduct a massive attack on Midway Island and occupy key points in the Aleutian Islands in order to draw the U.S. carriers into decisive battle. Yamamoto was almost certain that the U.S. would not avoid battle, but if they refused to fight, Midway would still offer an useful outpost to help curb the carrier raids through air searches linking up with those from Wake Island. Step Three was to conquer the Fiji and Samoa Archipelagos in order to permanently sever the life-line between the U.S. and Australia.⁴

The Japanese were very confident that their plans would meet with continued success. Bedazzled by earlier lopsided victories, the Japanese leadership could not conceive that, within a month, their grandiose plans for further expansion would be dealt a serious blow in the Battle of the Coral Sea. This battle marked the beginning of the end of the Japanese war effort. That is the legacy of Operation MO.

The Strategic Area – Coral Sea

Geography

The Coral Sea is an extensive, anvil-shaped body of water bounded on the west by Northeast Australia and the great barrier reef, on the north by Southeast New Guinea, the Louisiade Archipelago, the Solomon Islands and the Santa Cruz Islands, on the east by the New Hebrides and Loyalty Island groups and New Caledonia, and on the south by the latitude 25 degrees South (see Appendix A for a chart depicting the Battle of the Coral Sea). This setting provided ample room for carrier operations, although there were several navigational hazards in the form of scattered reefs and small islands.

Notes

¹ Bernard A. Millot, *The Battle of the Coral Sea*, trans. By S. V. Whitley (Annapolis, MD: Naval Institute Press, 1974), pp. 12-13.

² John B. Lundstrom, *The First South Pacific Campaign: Pacific Fleet Strategy*

December 1941 – June 1942 (Annapolis, MD: Naval Institute Press, 1976), pp. 40-41.

³ Saburo Sakai, Samurai! (Annapolis, MD: Naval Institute Press, 1991), p. 136.

⁴ Millot, pp. 15-17, 27-28.

Chapter 2

The Battle of the Coral Sea

Scratch one flattop!

—LCDR R.E. Dixon reporting the sinking of Japanese light carrier Shoho

Despite the fact that the Navy General Staff was superior in the chain of command to the Combined Fleet, Admiral Yamamoto's forceful personality and prestige carried the day. The result was that Operation MO, originally scheduled for late May 1942, was moved up to early May to permit execution of Yamamoto's coup de main, Operation MI in early June, less than a month later. The rush in planning and executing Operations MO and MI had dire consequences for the Japanese.

Operation MO

The Commander of the 4th Fleet, VADM Narimi Inoue, was tasked with executing Operation MO. On 23 April, Inoue issued "South Seas Force Order No. 13" the basic order for the operation.² Inoue's seapower strength for Operation MO consisted of three separate forces: The first, MO Invasion Force was under the command of Rear Admiral Goto and consisted of three subsidiary forces and groups: (1) The Covering Force, comprised of four heavy cruisers, a destroyer, and the small carrier *Shoho*; (2) The Port Moresby Invasion Force, made up of the troop transports for the landing, a cruiser, and 6 destroyers; and (3) A Support Group made up of a large seaplane carrier, two light

cruisers, and some auxiliary ships. The second force was the Tulagi Invasion Force, under the command of Rear Admiral Shima. It consisted of a small number of transports, destroyers, and auxiliary ships, and was assigned the task of capturing the island of Tulagi, in the Solomons, so Support Group could establish a seaplane base and deny the Allies a strategic vantage point for scouting the eastern approaches to the Coral Sea. Covering the entire operation was "Striking Force" under Vice Admiral Takeo Takagi. It consisted of two carriers, Shokaku and Zuikaku, both veterans of the Pearl Harbor operation, accompanied by two heavy cruisers and six destroyers (see Appendix B for complete listing of Japanese forces). The plan was to seize Tulagi first, on 3 May, to secure the left flank of the invasion force. The Port Moresby Invasion Force would sail the next day. The Striking Force, after covering the Tulagi landings, would sail down the eastern side of the Solomons, then swing around the eastern tip of the island chain and head west into the Coral Sea to protect the Port Moresby Force against attack from the south or east. Simultaneously, the Support Group would occupy the island of Deboyne, just off the east coast of New Guinea. From Deboyne, seaplanes could scout for the Port Moresby convoy and cover its movements. The Japanese figured that the Allies would probably fight for Port Moresby, but since two American carriers had been reported in the raid on Tokyo, the Japanese did not believe they would face much opposition. They expected to have the advantage of surprise: enemy forces rushing west or north in reaction to the attack could be picked off by the Striking Force, lurking in ambush far to the east.³

In summary, Operation MO was planned in typical Japanese fashion. Their command and operational structure was extremely complex, involving the movement of a

number of small and, for the most part, relatively weak task forces across a wide area in a tightly synchronized pattern. The plan sought to enhance security, surprise the enemy, and confuse the enemy.⁴ Ultimately, the plan failed on all three counts.

Preliminaries to Battle

Although the Japanese plan relied heavily on the element of surprise, back in Hawaii, a handful of sailors and officers studied the Japanese movements in the South Pacific in an attempt to negate this crucial principle of war. Toward this end, the Office of Naval Intelligence had been reading parts of the Japanese Navy's most widely used operational code, JN-25, since September 1940. This was made possible by long delays in the Japanese completion of the regular periodic distribution of new codes and ciphers to many of the far-flung headquarters, ships, and bases of their much-expanded empire. By mid-April 1942, Pacific Fleet intelligence had determined that the Japanese were preparing for an offensive in the South Pacific and that Port Moresby was the objective. Decrypted messages and traffic analysis placed three aircraft carriers enroute to Rabaul for operations in the Australia area. In response to these alarming events, Admiral Chester Nimitz, Commander in Chief Pacific, ordered the carrier Lexington to get underway to join the Yorktown carrier group under Rear Admiral Frank Jack Fletcher (see Appendix C for complete listing of Allied forces). From Australia, General MacArthur sent a small force of Australian and American cruisers and destroyers, under Australian Rear Admiral J.G. Crace, to join Fletcher.⁵

Confident in their plan, the beginning of May 1942 found the Japanese forces in the process of securing their first objective, the landing at Tulagi. The landing was completed as scheduled on 3 May without resistance, as the Australians had already

deserted the island. About two hours after the landing was secure, all that remained off Tulagi were two destroyers and a few auxiliary vessels.⁶

Strike on Tulagi

While the Japanese were accomplishing their unopposed landing at Tulagi, Admiral Fletcher's task force was steaming in the middle of the Coral Sea, ready to do battle with any enemy force he encountered. Word of the Japanese landing did not reach him until the evening of 3 May, after Australian search planes had spotted the Japanese off Tulagi. Fletcher wasted no time in heading for the Solomon Islands, and fortunately for him, foul weather masked his approach. As the following day dawned, Yorktown launched her planes into the heavy cloud cover and rain squalls. Admiral Takagi's carrier striking force, which was supposed to have provided air cover for Tulagi, was almost 340 miles north, having been delayed by ferrying aircraft to Rabaul and refueling. As a result, there were no Japanese planes in the air when the Yorktown's dive bombers attacked Admiral Shima's minesweepers, transports, and destroyers off Tulagi. The Japanese were caught completely off-guard by the American air strikes; they evidently had discounted the possibility of American carriers appearing so early in the MO operation. Admiral Inoue ordered Takagi's Strike Force to pursue the Americans, but Striking Force was in the process of fueling. As a result, Takagi was forced to divide his force into two groups, sending the carriers and cruisers south immediately, while leaving most of the destroyers behind to continue fueling. Rear Admiral Goto and MO Covering Force, with the light carrier Shoho, also turned south in an effort to overtake the enemy carrier force. Neither could catch up with Fletcher, who had headed south to make a pre-arranged rendezvous with *Lexington* and Crace's cruisers and destroyers about 300 miles south of Guadacanal early on 5 May.⁸

Storm Warning: 5 – 6 May 1942

When Takagi's Striking Force entered the Coral Sea on 5 May, history's first carrier battle was in the making. In retrospect, it is amazing the battle did not occur, for another three days, until 8 May. This exchange could have taken place on any of the three preceding days. The fact that it did not occur until the eighth was a major factor in the Japanese inability to achieve a decisive victory.⁹

As Striking Force entered the Coral Sea, 5 May also found MO Invasion Force underway from Rabaul to Port Moresby via the Louisade archipelago, accompanied by Rear Admiral Marushige's Support Group. Admiral Goto's Covering Force was refueling south of Bougainville. The Japanese prepositioning was complete, the pincers were ready to close on the American position.¹⁰

Meanwhile, Task Force 17 spent the day refueling in the aftermath of the strike at Tulagi. Luckily for Fletcher, the *Yorktown* fighters shot down a patrolling Japanese flying boat from Tulagi before the aircraft had the opportunity to make a radio report of the sighting. The Japanese suspected that the plane had been shot down, but had no idea where the loss might have occurred and had no other scout planes available for a follow-up search. Despite these indications that the enemy was lurking in the area, Admiral Inoue decided to press on with Operation MO as planned.¹¹

On the morning of 6 May, a Japanese flying boat of the Yokohama Air Group found and shadowed Task Force 17. It accurately reported the location and composition of the

force to Takagi's headquarters in Rabaul, when Rabaul received the report and retransmitted it, Pearl Harbor picked up the signal, but the Carrier Striking Force did not.

Thus far the Japanese had decided not to alter Operation MO. There were however, two increasingly pressing problems that troubled them. First, with the location of the enemy carrier force unknown, and Port Moresby still resisting Japanese attempts to control its skies, time was becoming critical because Striking Force's Fifth Carrier division had to return to Japanese waters to prepare for Operation MI. Second, Admiral Inoue could not keep his invasion forces in the area south of Rabaul indefinitely because the danger posed by enemy submarines and aircraft was too great to be ignored. As MO Invasion Force approached the point of no return, Jomard Passage, a decision had to be made. Once beyond the Passage, they would have to commit themselves to the simple reality of total victory or total defeat. The Japanese forces in the Western Solomon Sea could not wait on a decision from Rabaul indefinitely, and when on the afternoon of the sixth Inoue was called upon to decide whether or not to press ahead with Operation MO, he again decided to proceed. He realized that everything would depend on how well Striking Force dealt with the enemy. Although battle was not joined on the sixth, the pace quickened as the day passed, with both sides preparing for a battle that would come with the next day's dawn. 12

Round 1: 7 May 1942

The morning of 7 May found the Japanese and American forces poised for battle. Rear Admiral Fletcher and the main body of Task Force 17 were maneuvering just southeast of the Louisades, preparing to launch search planes to the north to locate the Japanese carriers and the Port Moresby invasion convoy. Rear Admiral Crace's Support

Group (Task Group 17.3) had been detached earlier in the morning to proceed west to cover the southern exit of the Jomard Passage. Their fueling group, consisting of the fleet tanker *Neosho* and the destroyer *Sims*, was 280 miles to the southeast waiting in what it thought was a safe location. Meanwhile, sailing just north of the Louisades was Rear Admiral Goto's Invasion Force, consisting of MO Covering Force (with light carrier *Shoho*), MO Invasion Force, and most of Support Group. Striking Force was far to the east, about 280 miles southwest of Tulagi. So, while Fletcher was in range of MO Invasion Force, Takagi's Striking Force lay unsuspected to his rear, only 175 miles north of the *Neosho* and *Sims*. ¹³

The Japanese blanketed the Louisades with a network of seaplanes from Deboyne, ship-based floatplanes from Covering Force, bombers from Rabaul, and a flying boat from Tulagi. Striking Force searched to the west and south, while Task Force 17 searched to the North. Army Air Force bombers from Australia also covered the Louisades. Not surprisingly, with so many planes in the air, the various forces eventually located the enemy, although Striking Force remained undetected by the Americans. In all but one case, both Japanese and U.S. aviators either wrongly identified what they saw or incorrectly coded the sighting message. Rear Admiral Hara's Fifth Carrier Division's search planes mistakenly identified the oiler *Neosho* as a carrier, and launched a full strike force of 78 planes against what turned out to be the wrong target. Just minutes after his aircraft departed, Hara received a reconnaissance report which correctly identified and pinpointed the location of Task Force 17. Hara decided to destroy the American force (*Neosho and Sims*) he believed was south of him before heading west to attack the enemy ships located south of the Louisades (Task Force 17). The Japanese

attack planes quickly sighted the *Neosho* and *Sims* and, correctly identified them as an oiler and destroyer. As a result, they searched another two hours for the reported carrier. Unable to find a carrier and running low on fuel, the Japanese planes decided to settle for the *Neosho* and *Sims*. The *Sims* was quickly sunk and the *Neosho* left drifting without power (she eventually sank four days later, on 11 May). The air group straggled back to MO Striking Force, the last aircraft not returning until 1515.¹⁴

All the while, aircraft from the *Yorktown* and *Lexington* had located and attacked Covering Force, sinking the light carrier *Shoho* at around 1100. The remainder of Covering Force dispersed in terror, not even attempting to rescue survivors from the sunken carrier. When Admiral Inoue learned of the sinking of the *Shoho*, he finally deviated from Operation MO, ordering all forces not directly involved in the destruction of the American carrier forces to temporarily withdraw to the north.¹⁵

Japanese Dusk Attack: 7 May 1942

As the afternoon wore on, Takagi and Hara grew increasingly frantic. They were shocked and embarrassed at the news of the sinking of the *Shoho* and eagerly sought to strike back at the Americans. According to search reports, the American task force was just south of Jomard Passage, out of range of Striking Force. With their planes finally recovered from the strike on the *Neosho* and *Sims*, Takagi and Hara made a high-speed run to the west in order to close on the American carriers they believed to be operating south of Jomard Passage. In actuality, Japanese reconnaissance aircraft had mistakenly identified Crace's Task Force 17.3 as the enemy main body. At 1600, Hara sent 27 bombers aloft with his finest pilots and instructions to fly 280 miles to the west. Unknown to him was the fact that Fletcher's forces were only 170 miles away in the

same direction. The Japanese encountered increasingly bad weather and passed close to Task Force 17, where Fletcher's radar detected one group (of three) of the enemy's planes. In the ensuing battle, nine Japanese bombers were shot down. The strike leader called off the mission, and the Japanese planes jettisoned their bombs and torpedoes to save fuel and made a perilous journey through the storms and darkness, hoping to reach their carriers before dropping into the ocean. The other two bomber groups, evidently confused by Yorktown's electronic emissions, made landing approaches on Yorktown before realizing their error. Eventually, only 18 of the 27 planes made it back to Striking Force's carriers. Admiral Inoue was quite distressed at this turn of events, which had turned into a sequence of tragic errors. Search reports were incomplete, very confusing, and did not permit a reliable estimate of the enemy situation. As a result, at midnight he canceled the proposed night battle and postponed the Port Moresby landings until 12 May, allowing sufficient time for his forces to destroy the enemy carriers and disperse all other opposition. Goto was ordered to transfer two heavy cruisers to Takagi. Striking Force prepared for a dawn search which would locate the American carriers and bring about the decisive encounter on 8 May. The Japanese were extremely frustrated at their inability to bring the enemy carriers into decisive battle and firmly believed that all would be made right the next day.¹⁶

Round 2: 8 May 1942

As dawn broke on 8 May, the Americans were well to the south of the weather front that had been so kind the previous day. In contrast, the Japanese enjoyed the protection of cloud cover. However, the American forces possessed three advantages which offset what might have been a decisive advantage for their foe. First, they had a greater number

of aircraft remaining, 132 vs. 109 for the Japanese. Second, the Americans had one more cruiser and destroyer than the Japanese, and thus enjoyed an almost 2 to 1 advantage in defensive firepower. Third, and most significantly, the Americans had radar and homing devices which the Japanese did not.¹⁷

Both forces now had a fair idea of the other's probable location. The Japanese surmised that the Americans had gone south during the night. For their part, the Americans suspected that the Japanese would try to place themselves between Task Force 17 and their forces in the Solomon Sea. As it turned out, both Japanese and American assumptions turned out to be correct. The two sides found each other within a couple of hours after launching reconnaissance aircraft. The first American contact with Striking Force occurred at 0815, and the first Japanese contact with Task Force 17 occurred at 0822.¹⁸

Planes from the Yorktown and Lexington attacked repeatedly, damaging the Japanese carrier Shokaku, although not fatally. Zuikaku, although less than ten miles away, was hidden by a rain squall. Nearly simultaneously, Yorktown and Lexington came under attack. Sixty-nine Japanese aircraft bore down on the aircraft carriers, dropping their bombs and torpedoes. The Lexington suffered two torpedo hits to her port side and a bomb hit on her main deck. The more maneuverable Yorktown managed to dodge all the torpedoes, although she was hit by a bomb that penetrated to the fourth deck. The attendant fires were quickly brought under control. The Japanese aviators returning to the carriers gleefully reported that both American carriers had been sunk. In reality, the Yorktown was only slightly damaged and the Lexington, although more seriously damaged, actually continued conducting flight operations after being hit. Two violent

explosions a couple of hours after the Japanese attack mortally wounded the *Lexington* and she was subsequently abandoned and sunk by an American destroyer.¹⁹

The loss of the *Lexington* gave Admiral Fletcher serious cause for concern. He now had only one carrier and 40 aircraft. He knew that at least one of the enemy's carriers was still operational, and he had received inaccurate reports that another Japanese carrier may have subsequently reinforced the Japanese task force. Under the circumstances, he saw no other reasonable course of action and retired. Meanwhile, the Japanese commanders believed that both enemy carriers had been sunk. The *Shokaku* had been damaged so badly that she had to head back to Truk for repairs. The other Japanese carrier, the *Zuikaku*, was undamaged but low on fuel and short on aircraft and pilots. Under these circumstances, Admiral Inoue, believing the enemy had been defeated, decided not to launch a follow-up attack. He also determined that a single carrier with half an air group was insufficient to provide air cover for the Port Moresby invasion in the face of Allied land-based aircraft in New Guinea and Australia. The Port Moresby invasion was once again deferred – as it turned out, forever.²⁰

Notes

¹ John B. Lundstrom., *The First South Pacific Campaign: Pacific Fleet Strategy December 1941 – June 1942* (Annapolis, MD: Naval Institute Press, 1976), pp. 39-47.

² Ibid., p. 68.

³ Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York: The Free Press, 1985), pp. 156–157.

⁴ H. P. Willmott, *The Barrier and the Javelin* (Annapolis, MD: Naval Institute Press, 1983), p. 82.

⁵ Spector, pp. 157–158.

⁶ Edwin P. Hoyt, *Blue Skies and Blood: The Battle of the Coral Sea* (New York: Paul S. Eriksson, Inc., 1975), p. 21.

⁷ Spector, p. 159.

⁸ Lundstrom, pp. 102-103.

⁹ Willmott, p. 225.

Notes

- ¹⁰ Bernard A. Millot, *The Battle of the Coral Sea*, trans. by S. V. Whitley (Annapolis, MD: Naval Institute Press, 1974), p. 53.

 ¹¹ Willmott, p. 223.

 ¹² Ibid, pp. 228, 235-236.

 ¹³ Lundstrom., pp. 106-107.

 ¹⁴ Ibid., p. 107.

 ¹⁵ Ibid., pp. 107-108.

 ¹⁶ Ibid., pp. 109-110.

 ¹⁷ Willmott, pp. 228, 255-256.

 ¹⁸ Ibid., pp. 255-258.

 ¹⁹ Spector, pp. 161-162.

 ²⁰ Ibid.

Chapter 3

Analysis and Criticism of the Battle

The Battle of the Coral Sea could have been given many other names. For instance, "The Battle of Errors," "The Battle of Lost Opportunities," or "The Battle of the Blind" all accurately characterize different episodes of this battle. While valuable lessons may be culled from both Japanese and American performances in this crucial battle, it is perhaps more intriguing to examine the battle from the Japanese perspective and examine how they failed to achieve their objectives in a battle where they had the superior number of combat-tested naval forces. This chapter establishes why the battle unfolded as it did, and identifies what actions the Japanese might have taken (or not taken) to have been more successful both tactically and strategically. The following analysis and criticism is divided into five general areas: Planning; Technology; Tactics; Command and Control, Intelligence, Surveillance, Reconnaissance (C³ISR) and Battle Damage Assessment; and Leadership and Command.

Planning

Sound planning is an essential ingredient to military success. A superior force with a superior plan should enjoy great success against a lesser-prepared foe. In the Battle of the Coral Sea, while the Japanese did have superior forces, their planning was poor in

several respects. It is important to note that while the following discussion breaks down Japanese planning shortcomings into discrete areas, they are all closely related.

Simplicity

According to the *Principles of War* as defined in Appendix A of Joint Publication 3.0, *Doctrine for Joint Operations*, the principle of *Simplicity* is to *prepare simple*, *uncomplicated plans and concise orders to ensure a thorough understanding* by all concerned. Clearly, the Japanese did not do this in their planning for the Port Moresby invasion. It was an extremely complicated plan that attempted to harmonize the tactical employment of several different forces (MO Invasion Force, Tulagi Invasion Force and Striking Force) to achieve multiple objectives on a very tight timetable. The results were increased confusion, reduced coordination, and lost opportunities once the "fog of war" rolled in. Moreover, Japanese communications problems and a thinking enemy exacerbated efforts to execute these intricate tactical plans. As a consequence, they were unable to adequately synchronize the actions of their dispersed forces, and were less effective than they might have been if they had used a simpler, more straightforward plan.

Objective

According to the *Principles of War*, the purpose of the *objective* is to direct every military operation toward a clearly defined, decisive, and attainable objective. The Japanese military objectives in the Battle of the Coral Sea were to invade Port Moresby; destroy the American Carrier fleet, and capture Tulagi. In addition, Striking Force was tasked with offloading aircraft to Rabaul enroute to the area of operations. In fact, this latter objective was directly responsible for allowing the Americans to make a successful

airstrike on the Tulagi invasion force. Takagi's Striking Force was delayed in ferrying the planes to Rabaul, and was therefore too far north to provide aircover in support of the Tulagi invasion. While all these objectives had merit, the Japanese were forced to spread their forces too thin in order to achieve them within the set timeframe. Because the Japanese forces were not concentrated, the enemy was able to successfully attack weaker, isolated forces off Misima and Tulagi In summary, while each objective considered individually was reasonable, collectively they were more than the Japanese could handle. The Japanese would have been far more successful in achieving unity of effort had they concentrated on Admiral Yamamoto's overriding objective of destroying the American carriers in the area. Once the carriers were destroyed, they could have tackled the invasion of Port Moresby unencumbered by the presence of enemy naval forces.

Flexibility

Japanese planning lacked flexibility. Once the Americans took an unforeseen initiative or varied the order of their expected actions, Japanese plans and decisions began to crumble. Lack of flexibility precluded any alternative measures in case of an emergency. Had the Allies kept to the course, the time-tables, and the courses of action which the Japanese had "assigned" to them, there is no doubt that Operation MO would have been successful. Japanese planners should have incorporated branches and sequels based on both the possible outcomes of current engagements, as well as alternate future enemy courses of action. This would have greatly enhanced timely, sound decision-making.

Intentions vs. Capabilities

Closely related to plan flexibility is the concept of enemy intentions versus enemy capabilities. It appears that the Japanese based their planning solely on their estimate of the enemy's intentions, and did not give adequate weight to significant enemy capabilities which had the potential to seriously endanger their plans. It is not wise for a Commander to base his plans solely on his estimate of the enemy's intentions, as often the enemy will do the unexpected. The Japanese should have considered not only the enemy's likely course of action, but other courses of action of which the enemy was physically capable, rank ordered in terms of perceived danger to friendly courses of action.³

Forces

The Japanese force planning for Operation MO did not include an adequate number of large aircraft carriers to ensure success. Although they had used six carriers at Pearl Harbor against a single objective, four carriers at Rabaul and five carriers off Ceylon – the Japanese believed that only two carriers were required to achieve multiple objectives in the Coral Sea. At the time of the Battle of the Coral Sea, the Japanese had ten large aircraft carriers. At the same time, the Allies had only seven carriers. The Japanese could have exploited this advantage by allocating two additional carriers to the Fourth Fleet, one each to Striking Force and Covering Force, without unduly jeopardizing future operations such as Midway. This additional naval air capability would have been more than enough to soundly defeat an overmatched Task Force 17.

Surprise

Joint Pub 3.0 states that the purpose of *surprise* is to strike the enemy at a time or place or in a manner for which it is unprepared. Japanese planning seems to have placed an over-reliance on the element of surprise, and not enough emphasis on the use of overwhelming force to achieve their objectives. While it is true that the existence of Striking Force remained unknown to the Allies until after the sinking of the *Neosho* and *Sims*, this was probably due more to poor Allied reconnaissance than good planning. As discussed previously under *Forces*, Japanese planners should have allocated additional forces, at least two aircraft carriers, which would have been capable of achieving their objectives in the event that surprise was not attained.⁶

Security

The lack of operations security had serious consequences for the Japanese in the Battle of the Coral Sea. The Allies were able to employ cryptoanalysis and radio traffic analysis to determine that the Japanese were planning something big in the South Pacific centered around Port Moresby a couple of weeks before the operation began. As a result, it was impossible for the Japanese to achieve complete surprise in the Coral Sea. The fact that the Allies were able to break the code at all was due in large measure to the rapid expansion of the Japanese empire. Because of this rapid expansion, they were unable to distribute new ciphers and codes in a timely manner. As a result, many headquarters and units had to continue using older ones—giving the Allies precious additional time and additional familiar material to work on.

The Japanese should have ensured that new ciphers and codes were frequently and regularly distributed throughout their entire empire. This would have made the Allied

code breaking effort much more difficult and greatly increased their chances of achieving surprise in their objective of successfully invading Port Moresby.

Logistics

A fighting force requires logistic support to sustain combat operations. In the Battle of the Coral Sea, the Japanese were logistically challenged in two areas most critical to conducting naval air warfare: pilots and aircraft.

The Japanese did not make plans for replacement pilots or aircraft lost in battle or through operational failures. The implications of this planning flaw were exacerbated by the disastrous dusk raid on 7 May and the air battle of 8 May. The Japanese lost so many pilots and aircraft, for which they had no replacements, that Admiral Inoue had little choice but to retire from battle. Had they planned for replacements, they would have likely been able to successfully engage and defeat the weakened Allied force.

A larger issue contributing to the non-availability of pilots was the Japanese "crack pilot" policy which consisted of providing intensive training for their pilots, and then sending the "cream of the crop" on permanent assignment to the combat fleet. The pilots who fought in the Coral Sea were all veterans of Japanese expansionist wars, many having close to 1000 combat hours.⁸ While this made the carrier air forces very capable, this resulted in a dearth of good instructor pilots at the air training commands available to train new pilots. Moreover, the intensive training pipeline meant that the throughput of new pilots into the Fleet was insufficient to replace those lost in combat and other operations. Whether due to arrogance or neglect, the Japanese failed to realize that the war in the Pacific would become a war of attrition, and did not sufficiently plan to replace their losses.

Japanese planners should have allowed for losses inherent in a war of attrition, and addressed the necessity for reserve pilots and aircraft. With respect to the larger issue of pilot training, a wiser course of action would have been to train a larger number of highly competent, if not "crack" pilots; rotating a number of the best pilots back into training commands as instructor pilots.

Technology

From the Japanese perspective, it was technology they lacked and their enemy possessed which had the biggest impact on the Battle of the Coral Sea. This emerging revolution in military affairs was radar.

Radar was unquestionably one of the most important weapon systems to come of age in World War II. Although a Japanese scientist was one of the pioneers of radar development in the early 1930's, and its usefulness had been demonstrated in the Battle of Britain in 1940, Japan did not seriously attempt to exploit its military potential until after the Battle of the Coral Sea, when it was too late. The tremendous advantage that radar gave the Allies cannot be overestimated. There were several instances in which the Japanese might have been able to surprise their enemy, most notably on the evening of 7 May and the morning of 8 May if not for radar. Essentially, enemy radar meant that there was no way for the Japanese to catch their adversary completely by surprise. Conversely, the fact that Japanese forces did not have radar meant that they were susceptible to being surprised by attacking aircraft, as demonstrated at Tulagi and off Misima with the sinking of the *Shoho*.

The Japanese, as one of the pioneers of radar technology, should have forseen and exploited its military possibilities much earlier than they eventually did. Had the

Japanese forces had the benefit of radar in the Battle of the Coral Sea, it would have significantly reduced the enemy's ability to approach undetected and achieve surprise, and would have reduced the amount of friendly casualties and damage.

Tactics

While the Japanese tactics were generally sound in the Battle of the Coral Sea, there were some tactical blunders which may have had a bearing on the outcome of the battle.

First, the Japanese appear to have attempted to trap Fletcher's forces in the Coral Sea between a "hammer" (Striking Force) to the east, and an "anvil" (Covering Force) to the west. ¹⁰ If so, the strength of the "anvil" was clearly overestimated as was subsequently demonstrated by the sinking of the *Shoho*. The Japanese intentionally allowed the enemy to occupy a central position, dangerously exposing their transport forces. As stated earlier in the discussion on *Objectives* and *Forces*, the Japanese were trying to do too much with too little. The Japanese should have made a decision to either, (1) place Striking Force in a position to protect MO Invasion Force, or (2) send MO Invasion Force north out of harm's way until Striking Force dealt with Task Force 17.

Second, during the Allied air strike of 8 May, Rear Admiral Hara permitted his aircraft carriers to get too far apart to provide mutually supporting combat air patrols (CAP), and was forced to employ two, less capable CAPs. Hara should have kept his carriers closer together. This may have prevented the Shokaku from sustaining damage to its flight deck which knocked it out of the war until after the Battle of Midway.

Third, the Japanese dropped their *Type 91* torpedoes at too great a distance (between 1000 and 1500 yards) from the American aircraft carriers. While the bigger, less maneuverable *Lexington* was eventually hit, the smaller, more maneuverable *Yorktown*

managed to avoid the torpedoes. Another tactical blunder which aided the *Yorktown* was that the Japanese aircraft did not employ a scissors attack from both starboard and port, approaching the carrier from the front. Instead, the aircraft approached only from port, and only from abaft and abeam the carrier. The attacking aircraft should have mounted scissors attacks on both aircraft carriers, launching torpedoes from inside 1000 yards. Had they done so, they may have been able to severely damage or even sink the *Yorktown*.

Command and Control, Communications, Intelligence and Reconnaissance (C³IR) and Battle Damage Assessment

A robust C³IR system is essential to any fighting force. It provides the means for the Commander to obtain timely information necessary for intelligent decision-making, and the ability to relay orders to his/her forces. Inadequate C³IR was a major factor in Japan's failure to secure a more favorable outcome.

The Japanese Command, Control and Communications (C³) system was not responsive. The Commander of the 4th Fleet, Vice Admiral Inoue, was physically located in Rabaul, several hundred miles north of the theater of operations. Because of the extremely poor communication systems, it was impossible for Inoue to have an accurate mental picture of the situation, greatly affecting the soundness of his decisions. Compounding matters was the tendency of junior officers to obey the orders of superiors without question. This meant that Inoue's orders, whether or not they made sense, were seldom questioned by subordinate commanders, and the same was true throughout the chain of command.

There were several instances where communications problems resulted in lost opportunities. The first was after Task Force 17 struck Tulagi early on 4 May. Striking Force did not receive word of the attack until that afternoon, making their high-speed run to the south to intercept the enemy too late. Unquestionably, the most costly communications glitch was on 6 May when a reconnaissance aircraft accurately reported the location and arrangement of Task Force 17, but Striking Force did not receive it. Had Hara received the report and sent his aircraft on a strike mission, he would have likely caught the American ships in the process of fueling, undoubtedly with tremendous results.

The Japanese were at a serious disadvantage with respect to intelligence. While the Allies were able to break the Japanese code and gain valuable insight into their plans and force movements, the Japanese had little or no intelligence on the movement and intentions of the Allied forces. In fact, they were not even aware of the presence of Task Force 17 in the area of operations until after the air strike on Tulagi.

A significant contributing factor to poor intelligence was the fact that Japanese reconnaissance efforts, with few exceptions, were abysmal. First, there was a shortage of reconnaissance assets. Japanese doctrine considered aircraft carriers as offensive weapons, and they did not carry purely reconnaissance aircraft. As a result, the reconnaissance task was normally assigned to seaplane cruisers. In this case however, two seaplane cruisers which normally would have been part of Striking Force were instead assigned training duties in preparation for Operation MI.¹³ Another significant problem was that the size and composition of enemy forces were regularly misidentified by aviators. This occurred on 7 May when Admiral Crace's Task Force 17.3, which did

not have an aircraft carrier, was mistaken for Fletcher's Task Force 17. As a result, Hara ordered his aircraft to attack the wrong force, in the process losing several valuable pilots and planes when attacked by fighters from the actual Task Force 17, which just happened to be located between Striking Force and Task Force 17.3. More significant was the misidentification of the oiler *Neosho* and destroyer *Sims*. Believing he was attacking an enemy carrier, Hara sent a large strike force to attack the wrong target, in the process betraying the presence of Striking Force which up to this time had gone undetected by Task Force 17. Had the *Neosho* and *Sims* been correctly identified, Hara would not have committed his aircraft, and the Japanese would have had an excellent opportunity to catch Task Force 17 in the midst of an all-out attack on the *Shoho*.

It is clear that the Japanese should have placed more emphasis on all aspects of C³IR. Reliable communication systems are absolutely essential for a commander to exercise command and control. The Japanese should have placed more emphasis on training communications personnel and developing and fielding reliable communication systems. This would have enhanced timely dissemination of taskings, reconnaissance and intelligence information. Regarding reconnaissance assets, the lack of seaplane cruisers meant that Striking Force had to place greater reliance on the generally unreliable land-based reconnaissance assets. Admiral Yamamoto should have assigned the seaplane cruisers to Striking Force. They would have been much more valuable in the Coral Sea than they were participating in training preparations for Operation MI. Also, reconnaissance personnel clearly were not proficient in their duties. Training commands should have implemented a program of instruction which would have provided

reconnaissance personnel with the necessary training, as well as an appreciation for the importance of accurate reconnaissance.

Japanese aviators also were prone to generating erroneous, largely optimistic, claims of battle damage inflicted upon the enemy. Most notable was the reported sinking of both of Fletcher's carriers on 8 May. In fact, only the *Lexington* was sunk. This report was accepted by the Japanese commanders at face value, and no further attacks were launched against an enemy force believed destroyed. Erroneous battle damage assessments (BDA) clearly had a negative impact on Japanese commanders' decision-making. A commander needs accurate information on which to base his/her decisions. Japanese commanders should have stressed to aviation personnel the importance of providing accurate battle damage assessment. Additionally, they should have implemented measures to verify BDA claims, such as requiring photographic evidence and assigning follow-up BDA missions.

Leadership and Command

An analysis of any conflict must examine the military commanders involved. Ultimately they are responsible for the planning and execution of military operations, and the results achieved on the battlefield. It is clear from the outcome that the Japanese military commanders' performance was less than satisfactory in the Battle of the Coral Sea since ultimately they did not achieve any of their major objectives. It is interesting to note that the very same military commanders who were intimately involved in one of Japan's greatest military operations at Pearl Harbor only six months earlier were now unable to get the job done. Why did this happen? A big reason was a mix of overconfidence and arrogance brought on by "victory disease." Japan had grown

accustomed to achieving easy triumphs over what they came to regard as weak and incompetent foes. Their military forces took on an air of invincibility. This is one plausible explanation why the Japanese chose not to mass their forces in the Coral Sea. They did not believe that the enemy could seriously challenge their plans under any circumstances. The same can be said for logistical planning (or the lack thereof). The Japanese could not conceive that the enemy would be able to inflict significant casualties, therefore there was no need for reserve pilots and planes. Likewise, battle damage assessments were accepted at face value; Japanese commanders expected success, and thus did not attempt to verify or otherwise question extremely favorable reports.

The Allied strike at Tulagi made the Japanese aware that they had company in the Coral Sea. As a result, Striking Force hurried south in an attempt to engage the enemy, entering the Coral Sea on 5 May, four days ahead of the MO timetable. Instead of taking advantage of the situation and aggressively seeking out the enemy to do decisive battle, Takagi and Hara became more cautious and decided to stick to the original timetable. In fact, Takagi did not deviate from the plan until it was too late. Not until the *Shoho* had been sunk did he order the Invasion Force to steam north and remain out of harm's way until Striking Force could deal with Task Force 17. In stark contrast to the caution exhibited by Striking Force the previous two days was Hara's decision to launch a dusk attack on 7 May. This decision can only be regarded as reckless. Suffering a perceived "loss of face" through the sinking of the *Shoho*, Hara sought to gain a measure of redemption by ordering a long-range air strike on Task Force 17 despite terrible weather conditions and having only a general idea of where the enemy might be found.

Not surprisingly, the results were disastrous, as the Japanese lost valuable aircraft and irreplaceable pilots, and gained nothing in return.

Japanese military commanders seemed to have been proficient as long as the situation was developing according to plan. However, once the situation became unclear or unfavorable, they were less effective and more prone to making mistakes. The Japanese military commanders should have surmised the dangers wrought of overconfidence. They should have recalled the words of Sun Tzu: "Know the enemy and know yourself; in a hundred battles you will never be in peril." Instead, "victory disease" caused them to overestimate their own capabilities while underestimating, if not completely disregarding, those of the enemy. The Japanese commanders should have sought to remain objective and flexible. They should not have been too rigid to avoid taking calculated risks, but also not so reckless as to strike out irrationally in unfavorable situations.

In summary, the Japanese squandered a golden opportunity to deal the Allies a crushing blow in the Battle of the Coral Sea. Japanese failure to achieve their objectives in a battle where they had the superior number of combat-tested naval forces was due to significant weaknesses in planning; technology; tactics; Command and Control, Intelligence, Surveillance, Reconnaissance (C³ISR) and Battle Damage Assessment (BDA); and leadership and command. The forgoing criticism of the battle identified several actions the Japanese might have taken (or not taken) which would have made them more successful both tactically and strategically.

Notes

¹ Bernard A. Millot, *The Battle of the Coral Sea*, trans. by S. V. Whitley (Annapolis, MD: Naval Institute Press, 1974), p. 112.

Notes

² Ibid., pp. 115-116.

- ³ Richard W. Bates, *The Battle of the Coral Sea, May 1 to May 11 Inclusive 1942:* Strategical and Tactical Analysis (Springfield VA: National Technical Information Service, 1947), p. 116.
- ⁴ H. P. Willmott, *The Barrier and the Javelin* (Annapolis, MD: Naval Institute Press, 1983), pp. 211.
- ⁵ CAPT Wayne P. Hughes, Jr., *Fleet Tactics: theory and practice* (Annapolis, MD: Naval Institute Press, 1986), p.107.

⁶ Bates, pp. 115-116.

- ⁷ Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York: The Free Press, 1985), pp. 157-158.
- ⁸ Mitsuo Fuchida and Masatake Okumiya, *Midway: The Battle that Doomed Japan*, ed. and trans. by Clarke K. Kawakami and Roger Pineau (Annapolis, MD: Naval Institute Press, 1992), p. 280.

⁹ Bates, p. 120.

- Willmott, p. 223.
- ¹¹ Ibid., p. 260.
- ¹² Ibid., p. 269.
- ¹³ Ibid., p. 226.
- ¹⁴ Fuchida and Okumiya, p. 283.
- ¹⁵ Willmott, p. 230.
- ¹⁶ Sun Tzu, The Art of War, trans. by Samuel B. Griffith (London: Oxford University Press, 1963), p. 84

Chapter 4

Conclusion

It is not surprising that the Japanese and Americans both claimed victory after the Battle of the Coral Sea. The Americans lost one carrier, one oiler, one destroyer, 66 aircraft, and 543 men. At the same time, the Japanese lost one light carrier, one destroyer, various minor units and auxiliaries, 92 planes, and 1,074 men. In addition, each side had a fleet carrier damaged. When the smoke cleared, all the Japanese had to show for their efforts were seaplane bases at Deboyne and Tulagi. Not long after the battle, even the seaplane base at Deboyne was destroyed.

Historians generally consider the Battle of the Coral Sea a tactical Japanese victory but an Allied strategic victory. If so, it was a tactical victory only if one determines the victor by "gross tonnage sunk." Clearly, Japanese losses of an old, converted light aircraft carrier, a destroyer, and a few auxiliaries were lighter than the American loss of the fleet carrier *Lexington*, the valuable oiler *Neosho*, and the destroyer *Sims*. In contrast, the argument that the Allies achieved a strategic victory is more compelling. First, the Japanese did not achieve their objective of invading Port Moresby. In fact, their relentless expansion in the Pacific was permanently derailed in the Coral Sea. Second, the losses suffered at Coral Sea, while ostensibly relatively insignificant, were to have quite adverse consequences at the Battle of Midway less than a month later. The light

carrier *Shoho* had been sunk. The *Shokaku*, thought by the Japanese to only be slightly damaged, nevertheless was not able to be repaired in time for the Midway operation. The *Zuikaku*, while undamaged, had lost so many skilled aviators that she was likewise unable to answer the bell at Midway. Given their commitment to Operation MI, the Japanese could not afford the luxury of losing the services of three carriers for even the shortest period of time unless enemy losses suffered in return compromised the enemy's *strategic* capabilities. This was not the case in the Battle of the Coral Sea. The Americans lost only one carrier, the *Lexington*. The *Yorktown*, while damaged, was quickly repaired in the Pearl Harbor naval shipyard and played a significant role at Midway. In this sense, the balance of losses in the Coral Sea did favor the Americans. Because of their industrial might, they were better able to absorb the permanent loss of the *Lexington* than the Japanese were to do without the services of the Fifth Carrier Division for over two months at that stage of the war in the Pacific.¹

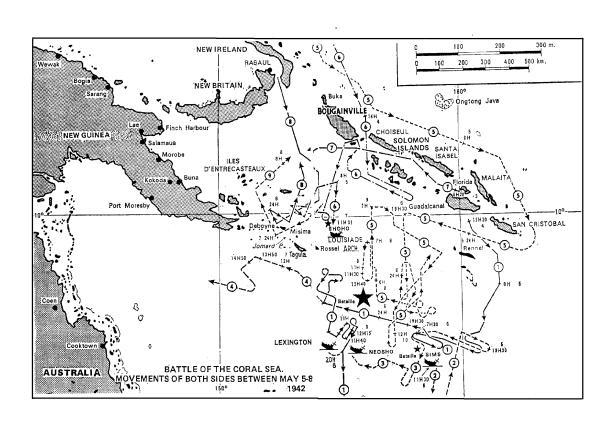
As this analysis has demonstrated, in many respects the Japanese were their own worst enemy in the Coral Sea. While it is true that hindsight is 20/20, it is clear that through proper application of the principles of war the Japanese could have avoided making many mistakes which ultimately denied them the opportunity to add another victory to an already impressive string of triumphs. Although war would rage for another three years in the Pacific, the tide had turned irreversibly against the Japanese in the Coral Sea during the first week of May 1942.

Notes

¹ H. P. Willmott, *The Barrier and the Javelin* (Annapolis, MD: Naval Institute Press, 1983), p. 518.

Appendix A

Chart of the Battle of the Coral Sea¹



- 1. Course followed by Task Force 17.
- 2. Course of Task Force 11 formerly under Admiral Fitch before they merged with Task Force 17.
- 3. Course followed by American tanker Neosho.
- 4. Course followed by Admiral Crace's Task Group 17.3.
- 5. Course followed by Admiral Takagi's Striking Force.
- 6. Course followed by Admiral Goto's Covering Force.
- 7. Course followed by Admiral Shima's Tulagi Invasion Force.
- 8. Course followed by Admiral Kajioka's Port Moresby Invasion Force.
- 9. Course followed by Admiral Marushige's Support Group.

Notes

¹ Bernard A. Millot, *The Battle of the Coral Sea*, trans. by S. V. Whitley (Annapolis, MD: Naval Institute Press, 1974), pp. 48-49.

Appendix B

Organization of Japanese Forces¹

Admiral Isoroku Yamamoto Commander-in-Chief, Combined Fleet

Vice Admiral Narimi Inoue Commander-in-Chief, 4th Fleet

MO INVASION FORCE Rear Admiral Aritomo Goto

Covering Force Rear Admiral Goto

4 heavy cruisers

1 light aircraft carrier (*Shoho*)

1 destroyer1 fuel tanker

Port Moresby Invasion Force Rear Admiral Kajioka

1 light cruiser 6 destroyers 11 troop transports

various small supply vessels

Support Group Rear Admiral Marushige

2 light cruisers

1 seaplane carrier

3 gunboats

1 mine layer

TULAGI INVASION FORCE Rear Admiral Kiyohide Shima

2 destroyers

1 mine layer

1 seaplane transport

1 transport

1 mine sweeper

various small supply vessels

STRIKING FORCE

Vice Admiral Takeo Takagi

5th Aircraft Carrier Division

Rear Admiral Hara

2 aircraft carriers (Zuikaku and Shokaku)

5th Cruiser Division

2 heavy cruisers

Destroyer Flotilla

6 destroyers

1 fuel tanker

Notes

¹ Bernard A. Millot, *The Battle of the Coral Sea*, trans. by S. V. Whitley (Annapolis, MD: Naval Institute Press, 1974), pp. 150-152.

Appendix C

Organization of Allied Forces¹

Admiral Chester Nimitz Commander-in-Chief, Pacific

TASK FORCE SEVENTEEN Rear Admiral Frank Fletcher

Attack Group (TG 17.2) Rear Admiral Kinkaid

5 heavy cruisers 5 destroyers

Support Group (TG 17.3) Rear Admiral Crace (Australian Navy)

2 heavy cruisers1 light cruiser2 destroyers

Aircraft Carrier Group (TG 17.5) Rear Admiral Fitch

2 aircraft carriers (Yorktown and Lexington)

4 destroyers

Fueling Group (TG 17.6) Captain Phillips

2 tankers2 destroyers

Search Group (TG 17.9) Commander DeBaun

1 seaplane replenisher

12 flying boats

Notes

¹ Richard W. Bates, *The Battle of the Coral Sea, May 1 to May 11 Inclusive 1942: Strategical and Tactical Analysis* (Springfield VA: National Technical Information Service, 1947), Appendix II, p. v.

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